ABSTRACT

A hardware-implemented color video data correction filtering system includes a plurality of linearization tables to gamma decompensate input color video data referenced to a non-linear color space, a plurality of a set of pre-calculated gamut shifting arrays to compensate for color point data of a plurality of constituent colors of a color monitor with each set of pre-calculated gamut shifting arrays coupled to one linearization table of the plurality of linearization tables, a plurality of hardware adders with each hardware adder coupled to one of the set of pre-calculated gamut shifting arrays, and a plurality of non-linearization tables coupled to the plurality of hardware adders to compensate for non-linearities of the color monitor and produce output color video data compensated for non-linearities and color points of the color monitor. Color video data is corrected in an accelerated manner through use of the pre-calculated gamut shifting arrays.